

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of producing a powder product comprising:

- a) providing a starting powder having a mean particle diameter D50 of greater than 25 μm ;
- b) subjecting said starting powder to a deformation step, thereby forming flake-like particles having a particle diameter to particle thickness ratio of between 10:1 and 10,000:1; and
- c) subjecting the flake-like particles of step (b) to comminution grinding in the presence of a grinding aid, and
- d) a deagglomeration step,

wherein said powder product is selected from the group consisting of metal powder, alloy powder and composite powder, and said powder product has a mean particle diameter D50 of at most 25 μm as determined using a particle size measuring apparatus in accordance with ASTM C 1070-01.

2. (Cancelled)

3. (Previously presented) The method of Claim 1 wherein said powder product has a composition represented by the following formula I,



wherein,

- A represents at least one element selected from the group consisting of Fe, Co and Ni,
- B represents at least one element selected from the group consisting of V, Nb, Ta, Cr, Mo, W, Mn, Re, Ti, Si, Ge, Be, Au, Ag, Ru, Rh, Pd, Os, Ir and Pt,
- C represents at least one element selected from the group consisting of Mg, Al, Sn, Cu and Zn, and

D represents at least one element selected from the group consisting of Zr, Hf and rare-earth metals, and

h, i, j and k each independently represent percentages by weight of 0 to 100% by weight, with the proviso that the sum of h, i, j and k is 100 % by weight.

4. (Previously presented) The method of claim 3 wherein,

A represents at least one element selected from the group consisting of V, Cr, Mo, W and Ti,

B represents at least one element selected from the group consisting of Mg and Al, and

C represents at least one element selected from the group consisting of Zr, Hf, Y and La.

5. (Previously presented) The method of Claim 3 wherein,

h represents 50 to 80 % by weight,

i represents 15 to 40 % by weight,

j represents 0 to 15 % by weight, and

k represents 0 to 5 % by weight.

6. (Previously presented) The method of Claim 1 wherein the powder product has a mean particle diameter D50 of at most 15 μm .

7. (Previously presented) The method of Claim 1 wherein the starting powder comprises particles having shapes selected from the group consisting of spherical shapes and irregular shapes.

8. (Previously presented) The method of Claim 1 wherein deformation step (b) is carried out in an apparatus selected from the group consisting of a rolling mill, an eddy mill, a high-energy mill and an attritor.

9. (Previously presented) The method of Claim 1 wherein said grinding aid is selected from the group consisting of liquid grinding aids, waxes, brittle powder and combinations thereof.

10. (Previously presented) The method of claim 9 wherein the grinding aid is selected from the group consisting of paraffin oil, paraffin wax, metal powder, alloy powder, metal sulphide, salt, hard material powder and combinations thereof.

11. (Previously presented) The method of Claim 1 wherein the grinding aid is *in situ* during comminution grinding step (c).

12. (Previously presented) The method of Claim 11 wherein the grinding aid is produced by adding a reactive gas which reacts, under comminution grinding conditions, with the starting powder while forming a brittle phase.

13. (Currently Amended) The method of ~~claim 2~~ claim 1, wherein the deagglomeration step is carried out in an apparatus selected from the group consisting of a gas contrajet mill, an ultrasound bath, a kneader and a rotor-stator.

14. (Currently Amended) The method of ~~claim 2~~ claim 1, wherein the deagglomeration step is carried out in the presence of at least one material selected from the group consisting of liquids, dispersing aids and binders.

15. (Withdrawn) The powder prepared by the method of claim 1.

16. (Withdrawn) A powder product having a mean particle diameter D50 of at most 25 μm , determined a particle measuring apparatus in accordance with ASTM C 1070-01, wherein said powder product has a maximum contraction value determined using a dilatometer in accordance with DIN 51045-1, of at least 1.05 times the contraction value of a comparative powder having identical chemical composition and identical mean particle diameter D50 relative to said powder product, the powder product and the comparative powder each being compressed to a compressed density of 50 % of theoretical density before measuring contraction values, and further wherein said powder product is selected from the group consisting of metal powder, alloy powder and composite powder.

17. (Withdrawn) A mixture comprising:

- (i) 1 to 95 % by weight of the powder product of claim 1; and
- (ii) 99 to 5 % by weight of an atomized powder produced by atomization, said atomized powder being selected from the group consisting of atomized metal powder, atomized alloy powder and atomized composite powder.

18. (Withdrawn) The method of claim 1 wherein said particle size measuring apparatus is a MICROTRAC X 100 particle size measuring apparatus.

19. (Withdrawn) The powder of claim 16 wherein said particle size measuring apparatus is a MICROTRAC X 100 particle size measuring apparatus.